Three areas will be examined with regard to the description of the airport system in Michigan:

- Number and Location of Existing Airport Facilities
- Airport Classifications
- Airport Service Areas

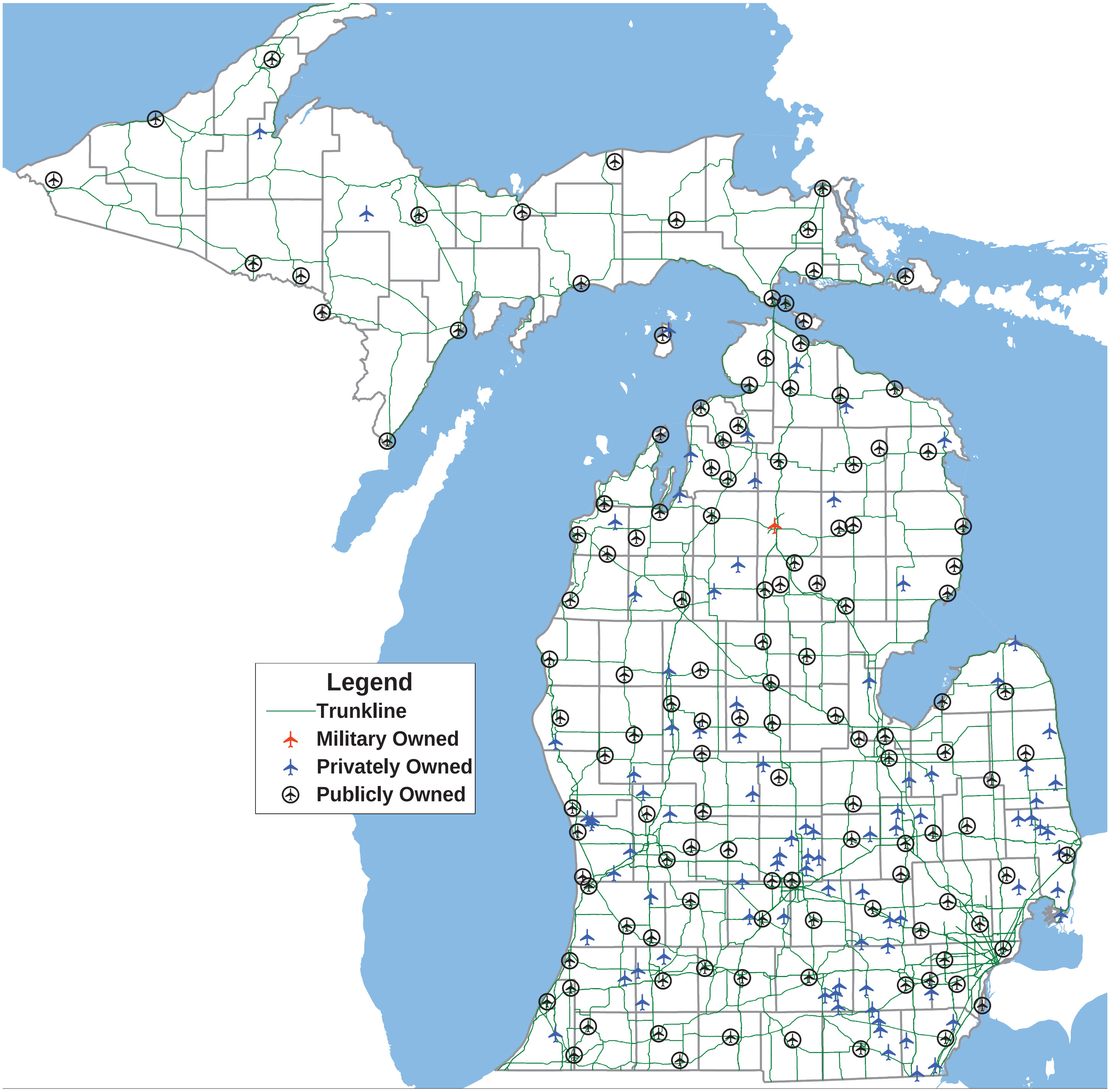
Number and Location of Existing Airport Facilities

Michigan currently has 235 public-use airports. The MASP 2008 does not include private-use airfields, heliports, seaplane bases, hospital helistops, and military facilities, although joint-use public/military facilities are included in the system plan. Of the 235 public-use airports, 129 (55 percent) are publicly owned and 106 (45 percent) are privately held. Both types of facilities are open to the public. Ownership is an important factor for at least two reasons: First, publicly owned airports tend to continue functioning as airports over the long haul with a sense of stability that is important to users of the airports. They are also more readily accepted as a community asset. A second reason is, privately owned airports are often under extreme pressure from developers and others for conversion into non-aviation uses, such as housing or commercial development. Once it is converted to another use, the likelihood of restoring an airport to its former use is remote, at best. Privately owned airports are more likely to drift into and out of public use and, consequently, are less reliable as a long-term transportation resource.

Map 1 and Table 3 show the number of public-use airports by ownership in each county in 2008. Two counties, Arenac and Keweenaw, are without a public-use airport. Counties without publicly owned airports are Baraga and Missaukee. With 10 each, Clinton County and St. Clair County have the largest number of public-use airports.

Map 1

Public Use Airports in Michigan, 2008



Source: MDOT Bureau of Aeronautics & Freight Services

Table 3

Public-Use Airports by County 2008							
County	Public	Private	Total	County	Public	Private	Total
Alcona	1	1	2	Lapeer	1	0	1
Alger	2	0	2	Leelanau	2	2	4
Allegan	3	4	5	Lenawee	1	5	6
Alpena	1	1	2	Livingston	1	6	7
Antrim	2	2	4	Luce	1	0	1
Baraga	0	1	1	Mackinac	4	0	4
Barry	1	0	1	Macomb	1	1	2
Bay	1	1	2	Manistee	1	0	1
Benzie	2	0	2	Marquette	1	1	2
Berrien	3	1	4	Mason	1	0	1
Branch	1	0	1	Mecosta	2	2	4
Calhoun	2	0	2	Menominee	1	0	1
Cass	1	0	1	Midland	1	0	1
Charlevoix	4	2	6	Missaukee	0	2	2
Cheboygan	2	2	4	Monroe	1	4	5
Chippewa	3	0	3	Montcalm	2	1	3
Clare	2	0	2	Montmorency	2	0	2
Clinton	2	8	10	Muskegon	1	0	1
Crawford	1	0	1	Newaygo	2	1	3
Delta	1	0	1	Oakland	3	0	3
Dickinson	1	0	1	Oceana	1	1	2
Eaton	1	3	4	Ogemaw	1	0	1
Emmet	2	0	2	Ontonagon	1	0	1
Genesee	3	3	6	Osceola	1	1	2
Gladwin	1	1	2	Oscoda	2	1	3
Gogebic	1	0	1	Otsego	1	0	1
Grand Traverse	2	1	3	Ottawa	2	5	7
Gratiot	1	2	3	Presque Isle	2	0	2
Hillsdale	1	0	1	Roscommon	4	0	4
Houghton	1	1	2	Saginaw	3	1	4
Huron	2	2	4	Sanilac	2	5	7
Ingham	1	3	4	Schoolcraft	1	0	1
Ionia	1	0	1	Shiawassee	1	3	4
Iosco	2	1	3	St. Clair	1	9	10
Iron	2	0	2	St. Joseph	2	0	2
Isabella	2	2	4	Tuscola	1	1	2
Jackson	1	4	5	Van Buren	1	1	2
Kalamazoo	1	3	4	Washtenaw	1	3	4
Kalkaska	1	0	1	Wayne	5	0	5
Kent	3	2	5	Wexford	1	1	2
Lake	1	0	1				

Source: MDOT Bureau of Aeronautics & Freight Services

Airport Classification

The FAA uses an Airport Reference Code (ARC) system to classify airports by the operational and physical characteristics of the most demanding aircraft intended to operate at the facility. This system has two components: 1) approach category, which relates to the operational characteristics of aircraft; and 2) design group, which relates to the physical characteristics of aircraft.

Approach Category

Table 4 shows approach speeds for each FAA approach category. An aircraft approach category is a grouping of aircraft based on 1.3 times the stall speed in landing configuration at maximum certified landing weight. The aircraft group must generate or be forecasted to generate at least 500 total annual operations. The highest category of aircraft to meet this standard is established as the critical aircraft at an airport.

Table 4

Approach Category Standards	
FAA Approach Category	Approach Speed
A	Less than 91 knots
B	91 to 120 knots
C	121 to 140 knots
D	141 to 165 knots
E	166 knots or more

Source: FAA

Design Group

Airplane design group is a grouping of airplanes based on wingspan. The design group of the critical aircraft determines the geometrics of the airport. Runway and taxiway widths, apron sizes, turning radii, and other airport physical characteristics are based on design group designation, as shown in Table 5.

Table 5

Design Group Standards	
FAA Design Group	Wingspan
I	Less than 49 feet
II	49 to 78 feet
III	79 to 117 feet
IV	118 to 170 feet
V	171 to 213 feet
VI	214 to 261 feet

Source: FAA

MASP Airport Classification

For the MASP, all airports are classified by approach category and design group of the primary runway. Table 6 shows the typical runway length for ARC classifications. Table 7 shows the number of public/private owned airports for each runway type.

Table 6

ARC Classifications with Runway Length		
Approach Category	Design Group	Typical Runway Length
A	I	3,000 feet or less
B	I	3,000 to 3,500 feet
B	II	3,500 to 5,000 feet
C	II	5,000 feet
C	III (+)	More than 5,000 feet
D	III (+)	More than 6,000 feet

Source: MDOT Bureau of Aeronautics & Freight Services

Table 7

Number of Public/Private Owned Airports by Runway Type			
Runway Length	Runway Surface	Number of Airports (ownership)	
		Public	Private
1,500 feet or more	Turf	35	100
3,500 feet or less	Paved	10	5
3,500 to 4,300 feet	Paved	49	1
4,300 to 5,000 feet	Paved	12	0
More than 5,000 feet	Paved	10	0
More than 6,000 feet	Paved	13	0

Source: MDOT Bureau of Aeronautics & Freight Services

Other approach category-design group combinations are possible. Actual and recommended airport designations are based on the fleet mix of aircraft currently operating, or forecasted to operate, at a particular airport.

Examples of common aircraft found in each ARC are:

- A-I Beech Bonanza, Cessna 172, Piper Cherokee, Eclipse 500
- B-I Cessna 310, Beech Baron, Piper Navajo
- B-II Beech King Air 200, Cessna Citation II, Dassault Falcon 20
- C-II Canadair CRJ, Canadair Challenger, Grumman Gulfstream II, Learjet 25 & 55, Hawker 125
- C-III Boeing 727 & 737, McDonnell Douglas DC-9
- D-IV/V Airbus 320 & 330, Boeing 747 & 777, McDonnell Douglas DC-10, MD-11

MASP Classification and Priorities

The MASP 2008, from a state perspective, assigns airports to one of three tiers based on an airport's ability to respond to state goals and objectives, as described in Section 5.

- Tier 1 Airports respond to essential/critical state airport system goals and objectives. These core airports should be developed to their full and appropriate level.

- Tier 2 Airports complement the essential/critical state airport system and/or respond to local community needs. Focus at these facilities should be on maintaining infrastructure with less emphasis on facility expansion.

- Tier 3 Airports duplicate services provided by other airports and/or respond to specific needs of individuals and/or small businesses. These facilities are secondary to meeting the overall state system goals and receive only minimal safety enhancements, such as runway cones and wind socks.

Airport Service Areas

The value of an aviation facility is related to its proximity to population centers, business centers, tourism/convention centers, and other aviation-related traffic generators. The closer an airport is located to these areas, the greater its value as a transportation resource. Beyond certain travel thresholds, airports may have a reduced transportation value.

The analytical tool used in alternative development and analysis within MASP 2008 utilizes the "Statewide Travel Demand Model," which has been used historically for highway analysis in Michigan. The model divides the state into 2,307 Transportation Analysis Zones (TAZ), each generally a township or smaller in size. Each of the zones has a variety of socioeconomic data assigned to it, including current and forecasted population, employment, et cetera. Each TAZ is connected to all other zones using the actual highway network with appropriate speeds and travel times. This permits an analysis of travel time between all zones.